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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/000,227 | 11/30/2001 | Jianmin Chen | 95121961-201001 | 9224 |

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EXAMINER

JUBA JR, JOHN

ART UNIT

PAPER NUMBER

2872

DATE MAILED: 05/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/000,227

Applicant(s)

CHEN ET AL.

Examiner

John Juba

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-- Th MAILING DATE of this communication appears on the cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-59 is/are pending in the application.
- 4a) Of the above claim(s) 17-31 and 42-49 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 54-59 is/are allowed.
- 6) ☒ Claim(s) 32, 41 and 50-53 is/are rejected.
- 7) ☒ Claim(s) 1-16 and 33-40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2, 4
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of the invention of Group I and species Ia in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the examiner traversed his own restriction requirement. This is not found persuasive because the examiner's opening remarks were directed to election of a single species from myriad species not specifically identified. That is, rather than exhaustively enumerating the vast number of individual species claimed and requiring Applicants' to elect *one*, the examiner grouped a large number of species into each of two groups, based upon the *general* inventive principles relied upon ^{by} ~~be~~ the species. Thereafter, election of one of three types of beam splitter used by the various species within either group was required. That is, the examiner's remarks actually set forth the justification for election of a large number of species, and limiting that election to a reasonable number, based upon the beam splitter used by the elected species. Applicants have not pointed to specific errors in the examiner's rationale. The requirement is still deemed proper and is therefore made FINAL.

Claims 17 – 31 and 42 – 49 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention. Claims 11, 12, and 38 have been rejoined, in light of the allowability of the corresponding base claims. Applicant timely traversed the restriction (election) requirement in Paper No. 6.

Oath/Declaration

The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02. The oath or declaration is defective because:

The specification to which the oath or declaration is directed has not been adequately identified. See MPEP § 601.01(a).

It does not state that the person making the oath or declaration believes the named inventor or inventors to be the original and first inventor or inventors of the subject matter which is claimed and for which a patent is sought.

It does not state that the person making the oath or declaration has reviewed and understands the contents of the specification, including the claims, as amended by any amendment specifically referred to in the oath or declaration.

It does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.

In summary, it appears that the first page of the declaration is missing. Two signature pages are present in the file, along with four powers of attorney. Under current expedited publication procedures, a Notice of Allowability cannot be mailed until a proper declaration is actually on file.

Specification

The disclosure is objected to because of the following informalities. Appropriate correction is required:

The specification lacks a brief description of Figure 22.

The. The examiner infers that the acronym "NST" (Pg. 14, lines 17) refers to the "network synthesis technique" described on Page 12 (line 14). It would be helpful to associate the two more explicitly.

The specification is objected to for the graphical illustration in Table 1 within the specification. In light of the graphical illustration, Table 1 must be presented as a formal drawing in accordance with 37 CFR 1.81.. The following is an excerpt from MPEP 608.01 (at Pg. 600-59):

Graphical illustrations, diagrammatic views, flow-chart, and diagrams in the descriptive portion of the specification do not come within the purview of 37 CFR 1.58(a), which permits tables, chemical and mathematical formulas in the specification in lieu of formal drawings.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

Claims 1 – 16, 32 – 41, and 58 objected to because of the following informalities. Appropriate correction is required:

The examiner regards the recitation "without introducing retardation" in claims 1 and 32 to be a misnomer. Rotation [of polarization state] *cannot* be achieved without some total retardation. As described in the specification (paras. [0053] – [0054]), *total* retardance comprises "rotation" (by retardation of one polarized component with respect to an orthogonally polarized component) plus "compound" (or accumulated) retardation.

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The claims could be even more clear as to this distinction. Claims 2 – 16 and 33 – 41 are objected to as inheriting the same recitation through their dependency.

Claim 58, line 2, "from" should read - - form - - .

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 32 and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Buhner (U.S. Patent number 4,991,938). Referring *for example* to Figure 2 and the associated text, Buhner discloses a Faraday rotator (27) imparting a -90° rotation and no retardance. Thus, in passing linearly polarized light through [only] the Faraday rotator, Buhner anticipates the method step. The same rotation is undertaken irrespective of the orientation of the linearly polarized input light.

It is noted with respect to claims 32, *et seq.*, that the examiner regards "rotating light" to be an *act* rather than a result or *function* accomplished by the act. Since the claims do not adopt the form "step for [function]", and since the claims recite at least

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one act, the examiner believes that the claims do *not* invoke 35 U.S.C. § 112, sixth paragraph.

Claims 50 and 51 are rejected under 35 U.S.C. 102(b) as being anticipated by Louis (U.S. Patent number 5,202,744). Referring *for example* to Figure 3, Louis discloses a half-wave plate ($\lambda/2$) and a pair of polarizing beam splitters (PBS1)(PBS2) oriented orthogonally to each other and sandwiching the half-wave plate.

Claims 52 and 53 are rejected under 35 U.S.C. 102(e) as being anticipated by Miller (U.S. Patent number 6,373,614). Referring to Figure 5 and the associated text (*esp.*, Col. 11, lines 40+), Miller splits light leaving quarter-wave plate (33) with polarizing beam splitter (34), to form a second beam advancing toward half-wave plate (51); retards the second beam with a half-wave or retardation, to form a third beam advancing toward polarizing beam splitter (38); and splits the third light beam to form beam (35c) and beam advancing toward retarder stack (39).

Allowable Subject Matter

Claims 54 – 59 are allowable over the prior art. Subject to the aforementioned informality, claims 1 – 16 are allowable over the prior art. Claims 33 - 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art, taken alone or in combination, fails to teach or to fairly suggest

at least three retarders rotating a first band of wavelengths without retardation, as recited in claims 1 and 33;

a method comprising the step of rotating a first band of wavelengths without retardation further comprising either

transmitting a second band of wavelengths substantially unaltered, as recited in claim 40, or

performing the rotating step substantially independent of skew ray direction and after a first separating step and before a second separating step, as recited in claim 39. .

Similarly, the prior art fails to teach or to fairly suggest a method or arrangement in which light is polarized, retarded with an out-of-plane retarder, and split, as recited in claims 54 and 58.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Terahara, et al (U.S. Patent number 6,339,492) disclose a tunable birefringent filter.

Haas (U.S. Patent number 5,375,006) disclose an out-of-plane retarder in combination with a plane polarizer.

Bair (U.S. Patent number 5,062,694) discloses a birefringent filter employing out-of-plane retarders.

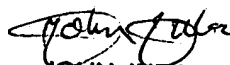
Yeh (U.S. Patent numbers 4,500,178 and 4,548,479) disclose birefringent filters which are isotropic to one wave band.

Luke, et al (U.S. Patent number 3,835,459) disclose an out-of-plane retarder in combination with a plane polarizer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Juba whose telephone number is (703) 308-4812. The examiner can normally be reached on Mon.-Fri. 9 - 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cassandra Spyrou can be reached on Mon.- Thu., 9 - 5. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


JOHN JUBA
PRIMARY EXAMINER
Art Unit 2872

May 19, 2003